Saunatec

HELO HSX Steam generator

Mounting Instructions
User Instructions

USER GUIDE

Read Instructions carefully before fitting

NOTE: **All plumbing and electrical installation work may be carried out by authorized personnel only and in accordance with local installation and wiring regulations.**

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General Information

Product description:

The New HELO HSX steam generator is a top quality and easy-to-service steam generator designed for domestic and commercial use.
The HELO HSX steam generator is developed to be user-friendly giving its user various options in enjoying the steam bath. The digital control unit can be mounted inside or outside the steam room. The steam generator can be equipped with an optional drain-valve for an automatic drain and flush program.

- POWER-RANGE (400V-415V 3N~) 3,4/ 4,7/ 6,0/ 7,7/ 9,5/ 12,0/ 14,0 kW
- POWER-RANGE (230V-240V 1N~) 3,4/ 4,7/ 6,0/ 7,7 kW
- POWER-RANGE (230V 3~) 3,4/ 4,7/ 6,0/ 7,7/ 9,5/ 12,0/ 14,0 kW (to be ordered separately)
- SERIAL OUTLET FOR MAX 56kW
- EASY TO SERVICE
- EXCHANGABLE HEATING ELEMENTS WITH THERMOFUSE PROTECTION
- AUTOMATIC FLUSHING PROGRAM
- AUTOMATIC WATERFILLING WITH ELECTRONIC WATERLEVEL CONTROL
- EASY TO INSTALL WALL- OR FLOOR MOUNTING
- EASY TO DESCALE

Plastic descale cover and descale pipe.
Access to the water tank from above the steam generator makes the descaling process easy.

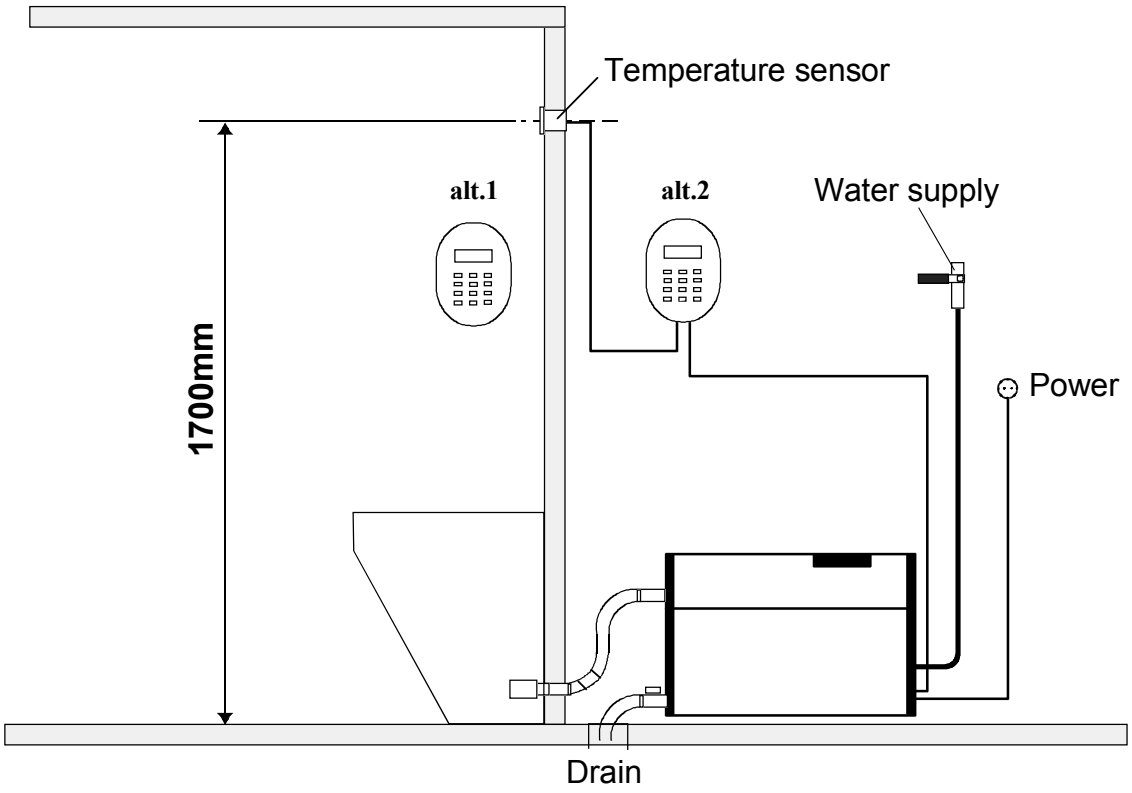
Mounting and installing HSX steam generator

Mounting location:

The HELO HSX steam generator is to be mounted in a dry space next to the steam room (i.e. in a maintenance room, cupboard, adjoining room, loft or cellar).
The steam generator requires water- and electrical supply (see below) and a floor-drain.
The length of the steam pipe is recommended to be maximum 5 meters (16ft).

DO NOT FIT THE STEAM GENERATOR INSIDE THE STEAM ROOM.
NOTE: 1) It is important to have unrestricted access to the generator to facilitate electrical and plumbing connection and maintenance.

2) The steam generator must be fitted in the upright position.(see instructions)



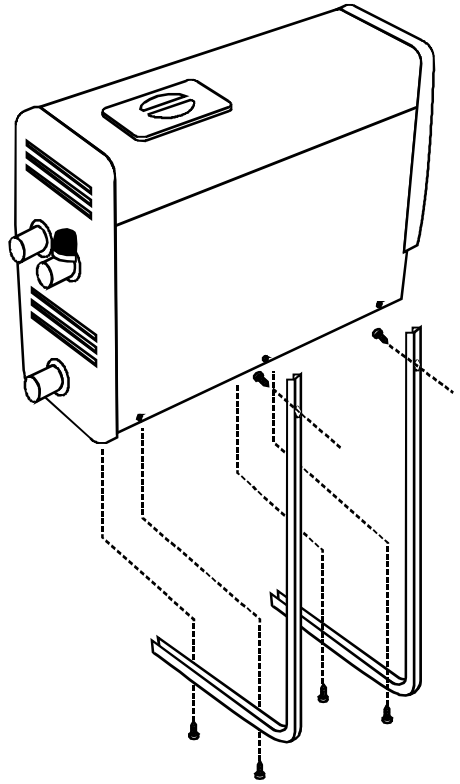
alt.1 Control panel mounted inside steam room

alt.2 Control panel mounted outside steam room

Mounting the generator and steam supply pipe:

The steam generator can be floor standing or wall mounted using the L-brackets (included in package). When mounting the steam generator to the wall use the keyhole slots in the L-bracket Use suitable screws according to wall material and local standards.

NOTE: HELO HSX-steam generator's weight when filled with water is approx. 17 kg. Check construction instruction when fastening the steam generator to wall for proper fastening.



When using the optional drain valve, wall mounting is recommendable for proper downhill gradient for the drain pipe.
Copper tube, 15mm, is recommended as steam pipe from the steam generator to the steam room. The steam pipe shall run in a straight downhill- or uphill gradient from the steam generator to the steam room. Avoid any "water pockets" or other dips in the steam feed pipe on its route to the steam-nozzle as these will collect condensed water and block the pipe.
Condensation should be able to run on a downhill gradient from the steam generator to the steam room if the generator is mounted above the level of the steam nozzle, or run back to the steam generator on a downhill gradient from the steam nozzle to the generator if the generator is mounted below the level of the steam nozzle.

NOTE: It is recommended to insulate the steam feed pipe for safety reason and to avoid heat loss /condensation.

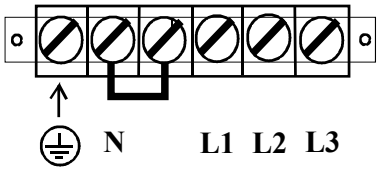
Electrical supply

Fused mains electricity should be terminated with an isolator adjacent to the steam generator. The supply should be rated according to the generator to be fitted and not less than the following:

Power	400V – 415V 3N~	230V-240V 1N~	230V 3~
3.4kW	5 Amp	15 Amp	8 Amp
4.7kW	7 Amp	20 Amp	12 Amp
6.0kW	9 Amp	26 Amp	15 Amp
7.7kW	12Amp	33 Amp	19 Amp
9.5kW	15Amp	-----	24 Amp
12 kW	19Amp	-----	30 Amp
14 kW	23Amp	-----	35 Amp

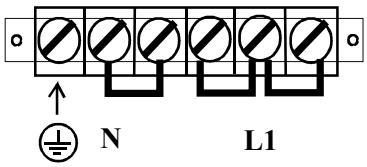
An isolation switch should be fitted in a convenient location outside the bathroom area so that the generator can be switched off when not in use. Remove the vented top plate of the generator and connect into the terminal block as follows:

3 –phase



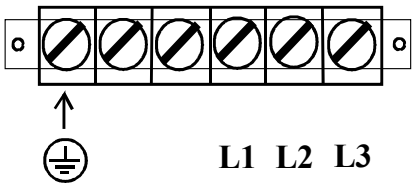
3,4 -- 14 kW
400 V - 415 V
FACTORY SETTING

1-phase

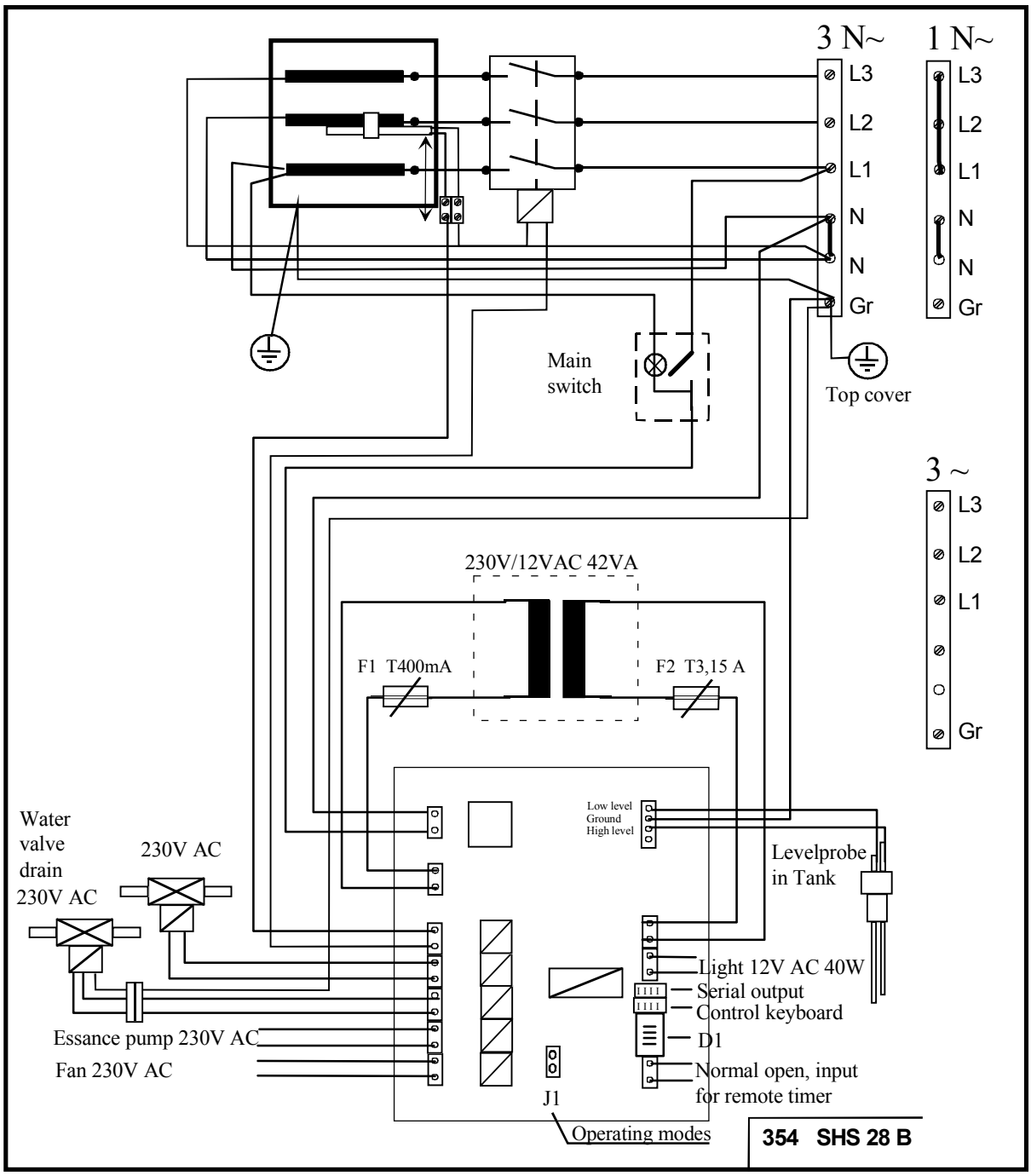


3,4 / 4,7 / 6,0 / 7,7 kW
230 V - 240 V
Att. max. 7,7 kW

3-phase



3,4 – 14 kW
230 V 3~
FACTORY SETTING
Used only in specific electrical systems-
to be ordered separately from the factory!


3 N~
1 N~
L3
L2
L1
N
N
Gr
Main switch
Top cover
3 ~
230V/12VAC 42VA
F1 T400mA
F2 T3,15 A
Water valve drain 230V AC
230V AC
Low level
Ground
High level
Levelprobe in Tank
Light 12V AC 40W
Serial output
Control keyboard
D1
Normal open, input for remote timer
Essance pump 230V AC
Fan 230V AC
J1
Operating modes
354 SHS 28 B

HSX Operating modes

HSX steam generator have two programable working modes,
the TIME SETTING MODE or the CONTINOUS RUN MODE.
The different runningmodes are set by a jumper on the PC-borad inside the steam generator.
For setting the function proceed as following:

- Disconnect the mains electricity (remove fuses or switch to OFF).
- Open the top cover of the steamgenerator.
- Set the jumper according to function.or connect the remote timing/switch device.
- Replace the top cover.
- Activate the fuses.

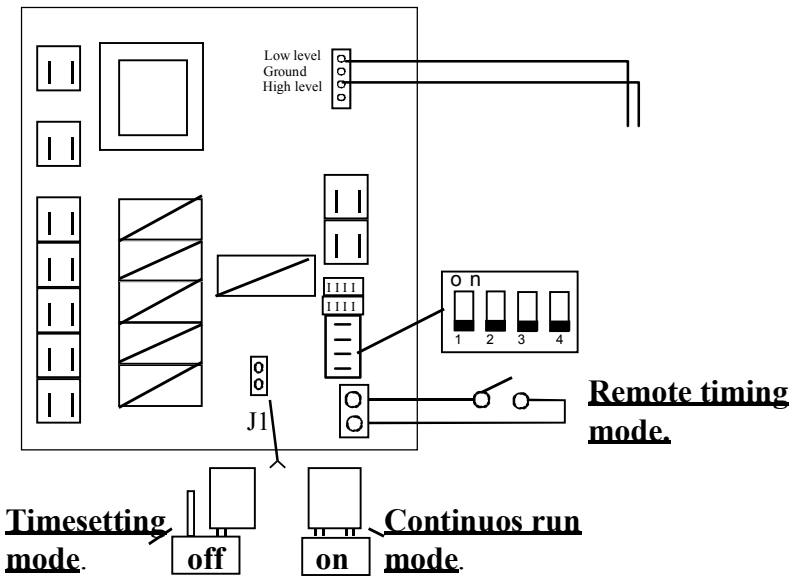
Operative Options:

1. Continous Run Mode: Jumper in ON position

2. Time Programming Mode: Jumper in OFF position

3. Remote Timing Mode: Jumper in ON position AND remote timing/switch device connected to screw connector.

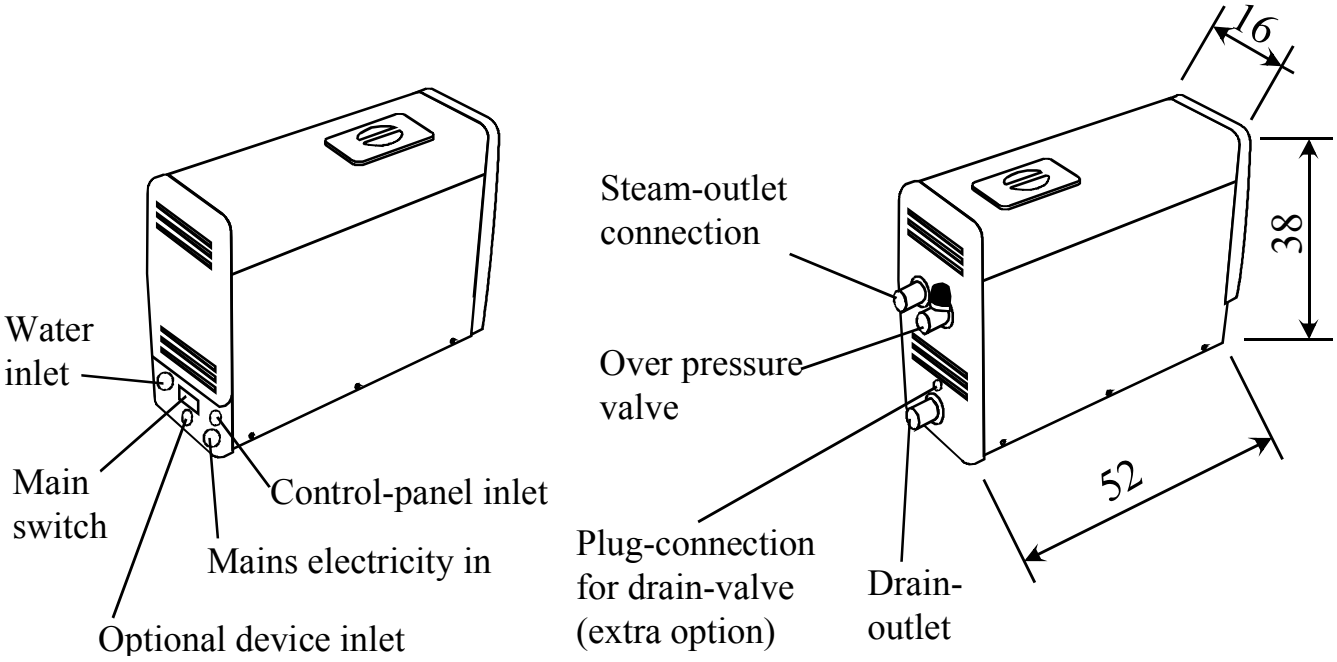
For detailed using instructions see USER GUIDE.



Water Supply

Connect the flexible ¾”water hose (included in package) to a cold water supply, or max 65°C warm water, equipped with a manual shut off valve and with a water-pressure of min 0.2 bar and max 10 bar. Use of water with a hardness over 7°dH or containing other impurities, may reduce the lifetime of the heating elements if the steam generator is not properly emptied after use. (Also see descaling with citric acid).

The warranty is not valid if the steam unit has been installed or used otherwise than stated in this manual. Functional failures caused by hard or impure water are not covered by the warranty.



User and Service Manual

Digital Control for HELO HSX Steam generator

WARNING
Installation and mending must be performed by qualified personnel in the respect of all the following safety norms:

DLGS N°615/96 del 12/11/96 (ECC Document 89/336 on Electromagnetic compatibility)
DLGS N°626/96 del 26/11/96 (ECC Document 93/68 on Low Voltage)

The present manual is addressed to technical personnel qualified for installation

PRODUCT DESCRIPTION

The "HSX DIGITAL CONTROL PANEL" System is an electronic device that controls the following functions:

- Steam Bath On/Off
- Adjustable bathing time and temperature
- Light
- Fan
- Essence Pump
- 4 programmable/preset programs
- Alarm analyses

DESCRIPTION OF CONNECTIONS

Power inlets

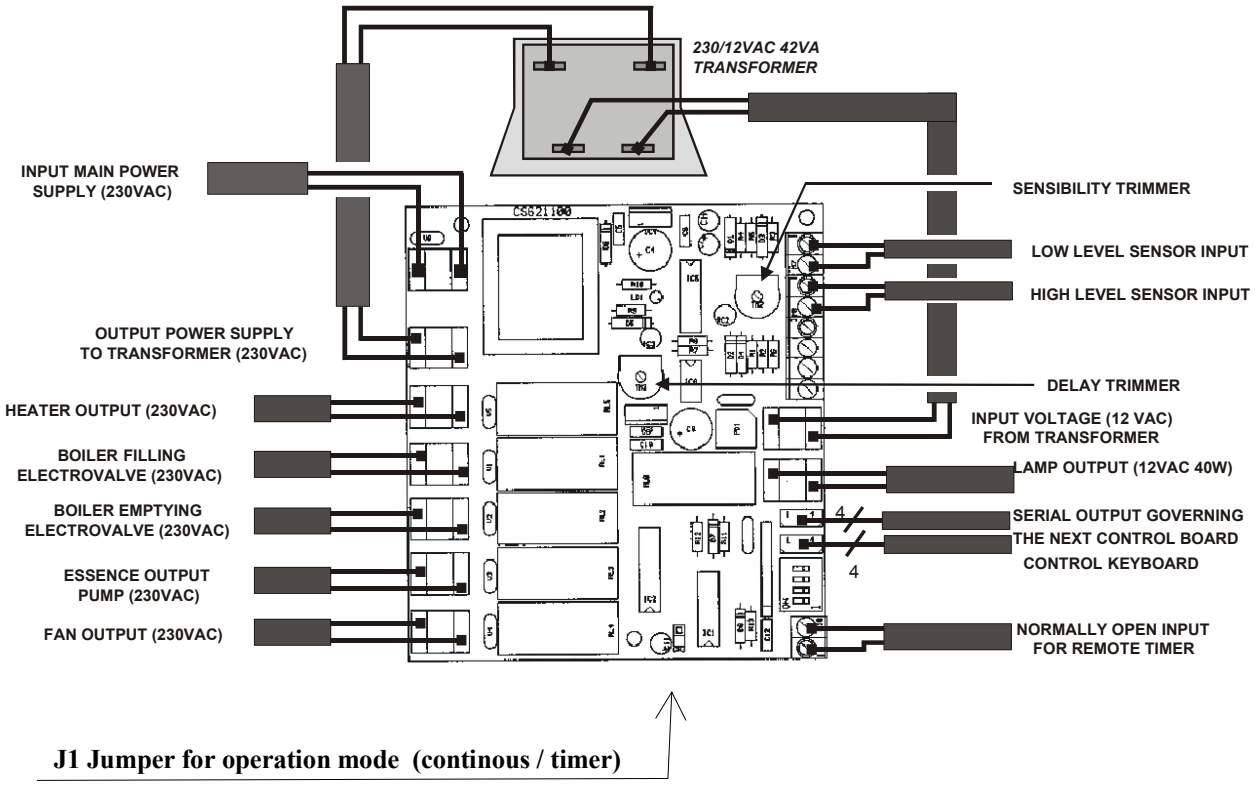
- 1 serial inlet for the keyboard
- 2 resistive level sensors (predisposed for capacitive or ultrasound level sensors)
- Supply 5VCC, digital exit: open collector NPN
- The high level sensor has to have adjustable sensitivity
- 2 dip switch
- 1 normally closed connector for a remote timer

Outputs

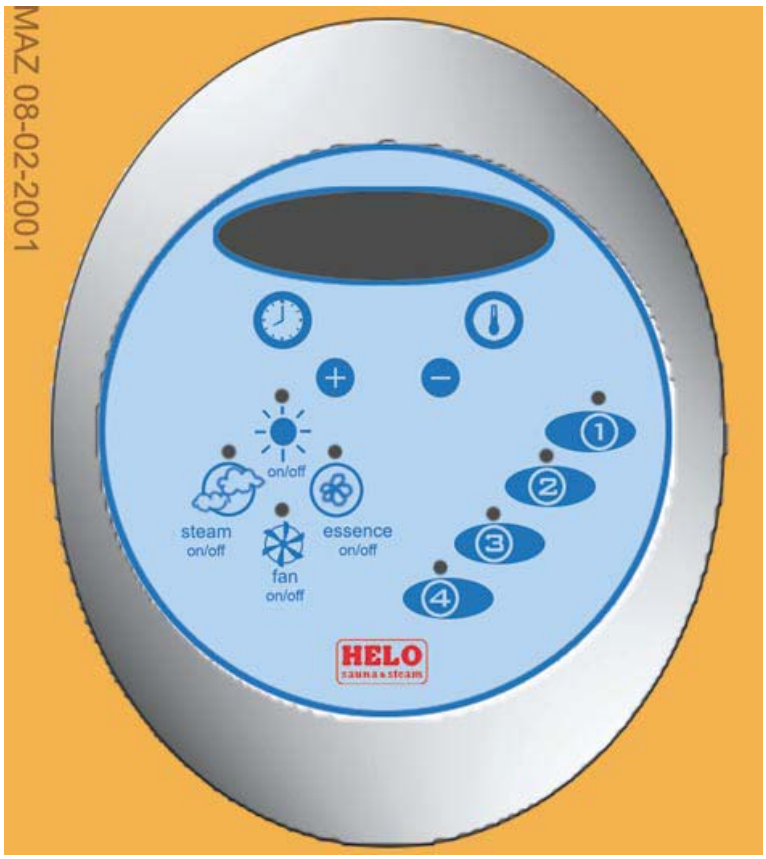
- 1 serial output for controlling the next control (without using a split box)
- 1 lamp 12VAC – 35 WATTS MAX.
- 1 water-charging electro valve 230 VAC
- 1 drain electro valve 230 VAC
- 1 essence pump A 230VAC MAX 400WATTS.
- 1 fan 230VAC MAX 400WATTS.
- 1 steam generator output (remote control switch coil) 230VAC MAX 3000W

Details
Board dimension: 10CMX11 CM
Second transformator to supply level sensors

HELO HSX DIGITAL CONTROL CONNECTION DIAGRAM



KEYBOARD DESCRIPTION



4 digit LED display
on/off steam bath key with led
on/off lamp key with led
on/off fan key with led
on/off essence pump key with led
time key
temperature key
Plus key
Minus key
Memory1 key with led
Memory2 key with led
Memory3 key with led
Memory4 key with led

OPERATIONS

Operative Options
The heater can either work in the continuous running mode (A) or with the time setting program (B).
In the PCB there is a Jumper (J1) that can be selected as follows:
ON = the system works in the continuous running mode
OFF = it works with the time setting program

A. Continuous Running Mode
The plus and minus key in the time function are inhibited.
When the generator is on, the display shows temperature and if the time key is pressed the display shows the 4 central segments running rightward for a few seconds.

B. Time Programming Mode
When the time setting mode is switched on, the factory set time is 60 minutes but it can be changed from 5 to 240 minutes (with intervals of 5 min) by using the plus and minus keys.
The time can be changed also after the set steam bath program has started, by pressing the time key and subsequently the plus and minus keys within 2 seconds.
The display alternatively visualizes for 30 seconds the temperature and for 30 seconds the remaining bathing time.

C. Remote Timing Mode
The system can also be connected to a remote timer that switches on and off the system.
Using this option all the automatic re-starts of the alarm modes are inhibited. When an alarm stops the treatment for safety reasons during the remote timing mode , the system can be re-started by only the operator.

STEAM BATH FUNCTION

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Temperature and Time setting

The temperature set by default is 45°C and it can be changed from 30°C to 50°C with steps of 1°C by using the plus and minus key. The temperature can be changed also after the set steam bath program has started, by pressing the temperature key and subsequently the plus and minus keys within 2 seconds.
Time can be changed by using the time key and the plus and minus keys.

The Steam generator

When the user starts the treatment the electro valve starts taking in water, when the water reaches the low level sensor the heating starts.
When the water reaches the high level sensor the electro valve closes off; as soon as the high level sensor does not feel the water the electro valve opens and it closes when the right level is reached.

Steam generator cleaning cycle

The cleaning cycle is an automatic operation and is very important because it prevents the formation of chalk and bacteria in the water tank.
It is automatically activated 15 minutes after the steam generator has stopped. The drain electro valve opens for 2 minutes. The tank is filled with water up the high level sensor, and the draining electro valve opens again for two minutes.
During the cleaning cycle the external segments of the display go around in circles.

LAMP

The led is on when the lamp is off. Press the lamp key and the led switches off while the lamplight is on.
The lamp works independently from the steam generator **.**

FAN

The fan switches on automatically when the generator stops, and then the fan runs for 30 min.
During the steam bathing the fan can be switched on and off.
The led shows the status of the fan: on when the fan works and off when the fan is off.

ESSENCE PUMP

The essence pump starts working automatically when the set temperature is reached. It can stopped and restarted by pressing the essence pump key. The led is on when the pump is on and off when the pump is off.

PRE PROGRAMMABLE BUTTONS ..

There are 4 memory keys with default steam bath programs.
In order to memorize a personal steam bath, adjust temperature and time by using the plus and minus keys and then press a memory key for more than 2 seconds: in this way the customized steam bath program is saved in the memory key. The Memory keys all work as starting keys for the steam bath program
The led of the memory key is on when the chosen steam bath program is on. When the user is programming a key the led blinks, while saving the new data, in order to show that the reprogramming operation has been successfully performed.

ALARMS

If a problem occurs in the system while in function, the display visualizes an alarm number (A1, A2, A3, A4), which helps identify the nature of the problem.

- **A1:** If the high level sensor does not feel the water after 5 minutes from activating the steam bath, the system times out and it can be re-started. If the system does not get restarted after 5 minutes then the draining valve empties the water tank.
- **A2:** If the low level sensor does not feel the water for more than 1 minute during the treatment, the heating stops working. If the operator doesn't make any operational actions within 5 minutes then the whole system times out.
- **A3:** If the set temperature is not yet reached after 30 minutes the display visualizes the alarm. The steam bath continues according to program. Check the set temperature, sensor position, ventilation and dimensioning of the generator if the A3 shows again.
- **A4:** If the temperature level does not work all functions are inhibited

DRAIN VALVE (Optional)

Drain valve is easy to mount: screw on the magnetic valve and plug-in the cable.

MAINTENANCE OF THE HELO HSX-GENERATOR

The HELO HSX-generator has an automatic clean and flush feature which drains and flushes the tank after every bathing session (Requires the optional Drain valve).
This will improve the life length of the steam generator but it is not a substitute for the periodic de-scaling (see instructions) in areas with hard water.

Testing the water quality and descaling the HELO HSX-steam generator:

Water hardness test: Perform a water test with the test strips enclosed in steam generator package. Dip the test strip briefly (1 sec) in water and shake off excess water. Check the test strip after 1 minute.

Test result:
< 3° dH, very soft water, descaling after 500 hours of use.
> 4° dH, soft water, descaling after 100 hours of use.
> 7° dH, semi hard water, descaling after 50 hours of use.
> 14°dH, hard water, descaling after 30 hours of use, installation of a water-softener is recommended
> 21°dH, very hard water, Install a water softener.

These numbers are recommendations from the manufacturer, descaling with citric acid can be carried out more often.

DESCALING INSTRUCTIONS.

The descale procedure with the HELO HSX-steam generator is easy to carry out. Use only the recommended citric acid according to the instruction beneath.
Helo HSX-steam generators are supplied with a plugged descale access pipe for filling the tank with the mixture.

Descale instructions step-by-step.

1. Add 50g of citric acid into 1 liter of fresh water and mix well.
2. Open the descale plastic cover on the generator and open the cap on the pipe.
3. Pour the mixture into the tank of the steam generator and close the cap.
4. Start up the steam generator and let the citric acid solution boil in the tank for approx. 10 minutes. Stop the generator and depending on if there is a automatic or manual valve proceed as following:
    a. Automatic drain valve: The tank drains and flushes itself 15 minutes after the stop-command. After the drain and flush, start the generator and let it fill up with water before pressing the stop button again and Wait for the tank to drain again. This flush-procedure can be carried out 3-5 times.
    b. Manual drain valve: After the boiling procedure wait and let the citric acid stand in the tank for approx. 15 minutes, then drain the tank by opening the manual valve. After the tank is empty close the valve and start up the generator again and let it fill up with fresh water. After that press the stop button and drain the tank again. This flush-procedure can be carried out 3-5 times.

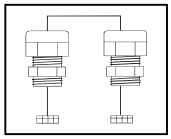
The steam generator is ready for use after descaling and if a smell of citrus occurs in the steam room; it is not harmful to the health and can be eliminated by flushing the generator again.

STEAM GENERATOR IN PUBLIC USE.

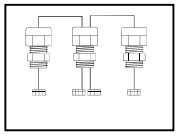
In addition to the descale procedure above it is advisable to maintain a proper service interval on a steam generator in public use (run-time 5 hours or more per day). This service, for example made every 6th. month (more often if the water-conditions require), should consist of a visual check on the interior of the tank, the scale build up on elements and level probe.
The tank can be cleaned on the inside through the fastening holes of the elements.

Saunatec

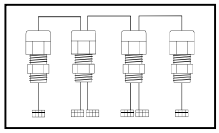
HELO HSX Steam generator



Split Kit 2



Split Kit 3



Split Kit 4

Split kit user and mounting instruction

Read Instructions carefully before fitting

NOTE: **All plumbing and electrical installation work may be carried out by authorized personnel only and in accordance with local installation and wiring regulations.**

SPLIT KIT 1, 2, 3 with adjustable drain cycle.

The HSX Split kit is used when connecting 2 or more (max 4) HSX-steam generators to generate steam for bigger steam rooms.
The Split kit contents the cables and connectors needed. The PC-board is equipped with a DIP-switch (see drawing) for activating each steam generator and adjusting the drain cycle.

The HSX steam generators adjustable drain cycle-feature that drains and flushes the tank every 3 hour, 3hour 20 min. or every 3hour 40min. after the procedure the steam generator continues to produce steam.

In case 4 generators are connected together, 2 of them are drained simultaneously.

Mounting the Split kit:

1. Remove the short plastic-end cover and the metallic top cover from the HSX steam-generator.

2. Open the 19mm diameter pre-drilled hole on the inside of the shorter plastic-end cover of the HSX-steam generators.

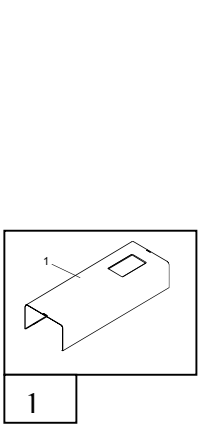
3. Mount the Split-kit cable and strain relief to the opened hole in the plastic end cover

4. Connect the wire/wires from the Split-kit to the PC-board connector according to the drawing and set the DIP-switch 1 and 2, in the following positions according to the steam generators connection number:

	DIP1	DIP2
HSX 1:	**off**	**off**
HSX 2:	**on**	**off**
HSX 3:	**off**	**on**
HSX 4:	**on**	**on**

5. Set the adjustable drain cycle, dip 3 and 4, on the PC-board on each HSX steam generator

	DIP3	DIP4
No drain cycle	**off**	**off**
3 hour	**off**	**on**
3hour 20min.	**on**	**off**
3hour 40min.	**on**	**on**



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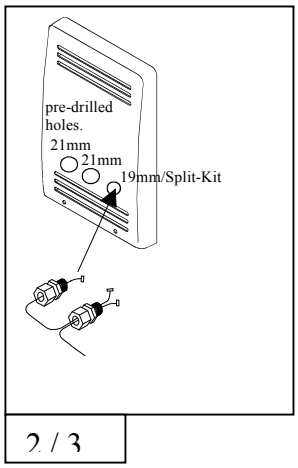

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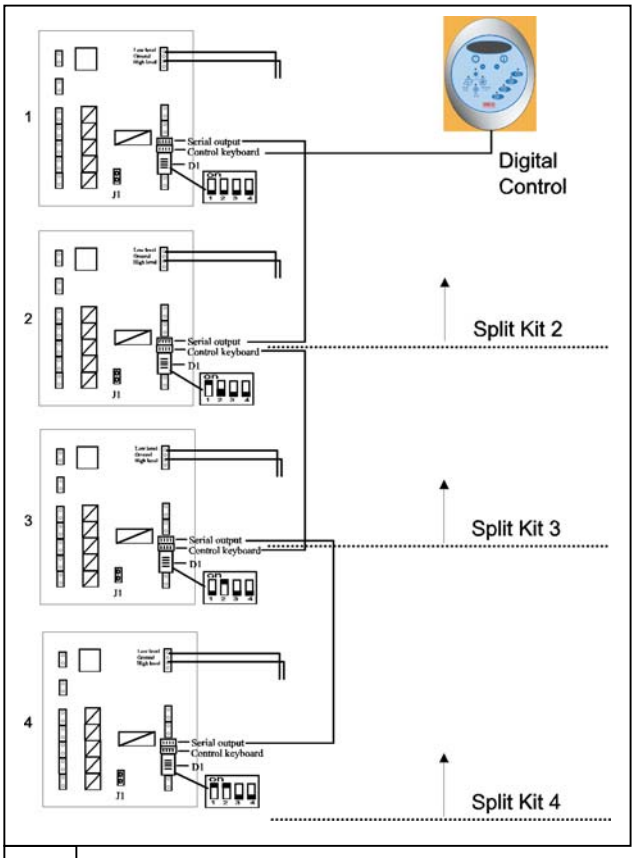

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In case 4 generators are connected together, 2 of them are drained simultaneously.

HSX Flowchart